

CLAIMS

1. A chromatography column assembly; of the type comprising at least a capillary column, at least a tubular structure which envelops said capillary column and is coaxial with it, means to directly heat said column, means to detect the temperature of said column and one or more electrically insulating covering elements, characterized in that said tubular structure comprises a plurality of tubular meshes each formed of a plurality of filaments woven together.
2. A chromatography column assembly as claimed in claim 1, characterized in that said means to heat said column and/or said means to detect the temperature of said column comprise at least one electrically conductive tubular mesh formed of filaments in electrically conductive material woven together.
3. A chromatography column assembly as claimed in claim 1, characterized in that said means to heat said column and/or said means to detect the temperature of said column comprise at least one electrically conductive tubular mesh formed at least in part of filaments in electrically conductive material and at least in part of filaments in electrically insulating material woven together.
4. A chromatography column assembly as claimed in claim 1, characterized in that at least one of said one or more electrically insulating covering elements comprise at least a tubular mesh formed of filaments in electrically insulating material woven together.
5. A chromatography column assembly as claimed in claim 1, wherein the innermost mesh of said plurality of coaxial tubular meshes has an inner surface placed in close contact with the outer

surface of said column.

6. A chromatography column assembly as claimed in claim 1, wherein at least one of said electrically insulating covering elements constitutes the outermost tubular mesh of said plurality of coaxial tubular meshes.

7. A chromatography column assembly as claimed in claim 1, wherein at least one of said electrically insulating covering elements constitutes the innermost tubular mesh of said plurality of coaxial tubular meshes.

10 8. A chromatography column assembly as claimed in claim 1, wherein at least one of said electrically insulating covering elements is interposed between at least two coaxial tubular meshes of said plurality of coaxial tubular meshes.

15 9. A chromatography column assembly as claimed in claim 1, wherein said capillary column is produced in fused silica or another suitable electrically insulating material.

10. A chromatography column assembly as claimed in claim 1, wherein said capillary column is produced in an electrically conductive material, such as a metal or the like.

20 11. A chromatography column assembly as claimed in claim 10, wherein said means to heat said column and/or said means to detect the temperature of said column are constituted by said capillary column in electrically conductive material.

25 12. A chromatography column assembly as claimed in claim 1, wherein said means to heat said column comprise at least a first of said electrically conductive coaxial tubular meshes and said means to detect the temperature of said column comprise at least a

second of said electrically conductive coaxial tubular meshes, at least a covering element in electrically insulating material being interposed between said first and said second tubular mesh.

13. A method to produce chromatography column assembly of
5 the direct heating type, wherein said chromatography column assembly comprises at least a capillary column, electrically conductive means to directly heat said column and electrically conductive means to detect the temperature of said column, characterized in that, for a certain length L of said column, at least
10 the resistance R1 of said electrically conductive means to heat said column is determined by weaving together a pre-established number of filaments in electrically conductive material to form one or more electrically conductive tubular meshes coaxial with said column.

15 14. A method to produce chromatography column assembly of the type with direct heating, wherein said Chromatography column assembly comprises at least a capillary column, electrically conductive means to directly heat said column and electrically conductive means to detect the temperature of said column,
20 characterized in that, for a certain length L of said column, at least the resistance R2 of said electrically conductive means to detect the temperature of said column is determined by weaving together a pre-established number of filaments in electrically conductive material to form one or more electrically conductive tubular meshes coaxial with said column.
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15. Method as claimed in claim 13 or 14, wherein one or more meshes of said electrically conductive means comprise filaments in

electrically insulating material woven with said filaments in electrically conductive material.

16. A method as claimed in claim 13 or 14, wherein said electrically conductive means to heat said column coincide with
5 said electrically conductive means to detect the temperature of said column.
17. A method as claimed in claim 13 or 14, wherein said electrically conductive filaments are produced with the same material.
- 10 18. A method as claimed in claim 13 or 14, wherein said electrically conductive filaments that form at least one of said one or more meshes all have the same diameter.
19. A method as claimed in claim 13 or 14, wherein said electrically conductive filaments that form said one or more meshes
15 all have the same diameter.